



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,872	09/30/2005	Akihiro Ohashi	357356US99PCT	2013
22850	7590	11/01/2010	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			BOYLE, ROBERT C	
		ART UNIT	PAPER NUMBER	
		1764		
		NOTIFICATION DATE		DELIVERY MODE
		11/01/2010		ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/551,872	<b>Applicant(s)</b> OHASHI ET AL.
	<b>Examiner</b> ROBERT C. BOYLE	<b>Art Unit</b> 1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 29 September 2010.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) 15, 19 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

**DETAILED ACTION**

1. Applicant has filed an English translation of the foreign priority document, JP 2003-98736, and the required statement. The filing date of the foreign priority document is April 2, 2003, which is prior to the 102(a) and (c) dates of the intervening references Tanaka and Nozaki. Therefore, the intervening references cannot be used as prior art because of the perfected foreign priority. The rejections below have not been necessitated by Applicant's amendment and new grounds of rejection have been introduced. Therefore, this action is NON-FINAL.

***Claim Objections***

2. Claims 15 and 19 are objected to because of the following informalities:
3. Claim 15 uses capital letters with "Wollastonite" and "Xonotolite" giving the impression that these are trademarked. As these describe minerals, there is no need for capitalization.
4. Claim 19 misspells the word poly(tolylcarbodiimide), which only has one "l" in 'tolyl'.
5. Appropriate correction is required.

***Duplicate Claims***

6. Claim 17 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 3. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 15 recites "whisker". However, as recited, the term "whisker" describes the shape of a filler, and not what the filler is. For example, the whisker could be a glass whisker or a metal whisker. As it is unclear what type of whisker is recited in claim 15, the scope is indefinite.

10. The enablement rejection presented in the previous Office Action is withdrawn in view of the evidence provided by the Applicant.

#### *Claim Rejections - 35 USC § 103*

11. Claims 1, 3-5, 7, 10-11, 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sugihara** (US 2002/0017734) in view of **Ahara** (JP 09-208740). As the cited JP publication is in a non-English language, the English computer translation ("Ahara"), has been utilized in place of JP '740. All column and line number citations are made with respect to the above mentioned translation.

12. As to claims 1, 7, Sugihara teaches an injection molded object (abstract; ¶ 40, 88, 109) made from polylactate (¶ 90, 180, Table 16) having 5-50 wt% of fine particles including aluminum hydroxide or magnesium hydroxide which can be surface treated (¶ 98-99). Sugihara does not teach the amount of Na<sub>2</sub>O present on the surface of the grains.

13. However, Ahara teaches using aluminum hydroxide as a flame retardant in resin molding objects where the flame retardant is aluminum hydroxide has 0.3 wt% or less Na<sub>2</sub>O concentration (¶ 1-6, 12-14, 16-21). It would have been obvious to use the flame retardant of Ahara because Ahara teaches aluminum hydroxide flame retardants do not generate poisonous gas, have high safety, have low price, and are chemically stable (¶ 5). It would have been obvious to use 0.3% or less Na<sub>2</sub>O because if the content of Na exceeds this range, heat resistance falls (Ahara: ¶ 17).

14. The range taught by Ahara overlaps the claimed range. It is well settled that where prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a *prima facie* case of obviousness is established. See MPEP 2144.05; *In re Harris*, 409, F3.d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 3d 1379, 1382 (Fed. Cir 1997); *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). Thus, it would have been obvious to one of ordinary skill in the art to use an amount within the range claimed.

15. As to claims 3, 14-17, Sugihara teaches 5-50 wt% fillers such as talc which can be surface treated (¶ 98-99). Ahara teaches that surface treatments include fatty acids and silane coupling agents (¶ 20). The range taught by Sugihara overlaps the claimed range. “It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art.” *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA

Art Unit: 1764

1980). Thus, as both talc and aluminum hydroxide are known in the art to be fillers (see Sugihara: ¶ 98-99), it would have been obvious to combine them to be used as fillers, as claimed.

16. As to claim 4, Ahara teaches surface treatment with fatty acids (¶ 20).
17. As to claim 5, Sugihara and Ahara do not teach the degradation or impact properties.

However, Sugihara and Ahara teaches essentially the same composition and process as that of the claimed, and one of ordinary skill in the art would have a reasonable basis to believe the composition of Sugihara and Ahara exhibits essentially the same properties. Since the PTO cannot conduct experiments, the burden of proof is shifted to the applicants to establish an unobvious difference. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

18. As to claim 10, lactic acid is either in the L or D enantiomer. Therefore, it would have been obvious that a polymer of lactic acid would be either poly(L-lactic acid), poly(D-lactic acid), or a mixture of the two enantiomer, poly(DL-lactic acid).
19. As to claim 11, poly(DL-lactic acid) that has a D:L ratio of 100:0 is identical to poly(D-lactic acid). As discussed regarding claim 10, poly(D-lactic acid is obvious.

20. Claims 2, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sugihara** (US 2002/0017734) in view of **Ahara** (JP 09-208740) and **Ozeki** (US 5,760,144). The discussion with respect to Sugihara and Ahara as set forth in paragraphs 11-19 above is incorporated here by reference.

21. As to claim 2, Sugihara teaches an injection molded object (abstract; ¶ 40, 88, 109) made from polylactate (¶ 90, 180, Table 16) having 5-50 wt% of fine particles including aluminum hydroxide or magnesium hydroxide which can be surface treated (¶ 98-99). Ahara teaches using

Art Unit: 1764

aluminum hydroxide as a flame retardant in resin molding objects where the flame retardant is aluminum hydroxide has 0.3 wt% or less Na<sub>2</sub>O concentration (¶ 1-6, 12-14, 16-21).

22. Sugihara and Ahara do not teach a second aliphatic polyester present.
23. Ozeki teaches blends of polylactic acid and a second aliphatic polyester blended together (abstract) where the second polyester is present in amounts of from 5 to 50 wt% (col. 2, ln. 17-24). It would have been obvious to use the second polyester as taught by Ozeki because the biodegradability is improved and the compositions give improved moldability (Ozeki: col. 2, ln. 1-10).
24. The range taught by Ozeki overlaps the claimed range. It is well settled that where prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a *prima facie* case of obviousness is established. See MPEP 2144.05; *In re Harris*, 409, F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 3d 1379, 1382 (Fed. Cir 1997); *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). In light of the cited patent case law, it would therefore have been obvious that in this particular instance to use an amount that falls within the claimed range.
25. As to claims 10-11, Ozeki teaches polymerization of L-lactic acid or D-lactic acid (col. 3, ln. 24) which would result in poly(L-lactic acid) or poly(D-lactic acid). A poly(DL-lactic acid) with a D:L ratio of 100:0 is identical to poly(D-lactic acid).
26. As to claim 12, Ozeki teaches the molecular weight of the polylactic acid is from 100,000 to 300,000 (col. 3, ln. 30).

27. Claims 2, 6, 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sugihara** (US 2002/0017734) in view of **Ahara** (JP 09-208740) and **McCarthy** (US 5,883,199). The discussion with respect to Sugihara and Ahara as set forth in paragraphs 11-19 above is incorporated here by reference.

28. As to claim 2, Sugihara teaches an injection molded object (abstract; ¶ 40, 88, 109) made from polylactate (¶ 90, 180, Table 16) having 5-50 wt% of fine particles including aluminum hydroxide or magnesium hydroxide which can be surface treated (¶ 98-99). Ahara teaches using aluminum hydroxide as a flame retardant in resin molding objects where the flame retardant is aluminum hydroxide has 0.3 wt% or less Na<sub>2</sub>O concentration (¶ 1-6, 12-14, 16-21).

29. Sugihara and Ahara do not teach a second aliphatic polyester present.

30. McCarthy teaches blending polylactic acid with a second copolymer which is an aliphatic polyester (abstract) and teach embodiments where 80 wt% of polylactic acid is used for 20wt% of the aliphatic polyester (Table 1). It would have been obvious to use a second polyester because such blends have superior tensile and mechanical properties as well as excellent biodegradability and aging properties and can be used in injection molding (col. 2, ln. 19-20; col. 3, ln. 42-54).

31. As to claims 6, 13, McCarthy teaches the copolymer can be a polybutylene adipate copolymer with terephthalate (col. 2, ln. 37-45) present in a ratio of 9:1 to 1:9 (col. 2, ln. 21-36). The ratio of 9:1 to 1:9 overlaps the claimed ratio. It is well settled that where prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See MPEP 2144.05;

Art Unit: 1764

*In re Harris*, 409, F3.d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 3d 1379, 1382 (Fed. Cir 1997); *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). In light of the cited patent case law, it would therefore have been obvious that in this particular instance to use the claimed amount.

32. As to claims 10-11, McCarthy teaches poly(D-lactic acid) and poly(L-lactic acid). A poly(DL-lactic acid) with a D:L ratio of 100:0 is identical to poly(D-lactic acid).

33. As to claim 12, McCarthy teaches the polylactic acid based polymer has a molecular weight of 15,000 to 250,000 (col. 6, ln. 1). This range overlaps the claimed range.

34. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugihara (US 2002/0017734) in view of Ahara (JP 09-208740) and Staendeke (US 4,957950). The discussion with respect to Sugihara and Ahara as set forth in paragraphs 11-19 above is incorporated here by reference.

35. As to claims 8-9, Sugihara teaches an injection molded object (abstract; ¶ 40, 88, 109) made from polylactate (¶ 90, 180, Table 16) having 5-50 wt% of fine particles including aluminum hydroxide or magnesium hydroxide which can be surface treated (¶ 98-99). Ahara teaches using aluminum hydroxide as a flame retardant in resin molding objects where the flame retardant is aluminum hydroxide has 0.3 wt% or less Na<sub>2</sub>O concentration (¶ 1-6, 12-14, 16-21).

36. Sugihara and Ahara do not teach a flame retardant aid.

37. Staendeke teaches flame retardant polyester compositions that use aluminum hydroxide and a synergistically active component (abstract) which includes melamine cyanurate (Table 9).

Art Unit: 1764

It would have been obvious to use a flame retardant aid because the combination of aluminum hydroxide with various synergists gives highly effective flame-retardant systems (col. 1, ln. 50-54).

38. Furthermore, "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Thus, as both aluminum hydroxide and melamine cyanurate are known in the art to be flame retardants (see Staendke), it would have been obvious to combine them to be used as flame retardants, as claimed.

39. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sugihara** (US 2002/0017734) in view of **Ahara** (JP 09-208740) and **Takahashi** (US 4,859,741). The discussion with respect to Sugihara and Ahara as set forth in paragraphs 11-19 above is incorporated here by reference.

40. As to claim 18-19, Sugihara teaches an injection molded object (abstract; ¶ 40, 88, 109) made from polylactate (¶ 90, 180, Table 16) having 5-50 wt% of fine particles including aluminum hydroxide or magnesium hydroxide which can be surface treated (¶ 98-99). Ahara teaches using aluminum hydroxide as a flame retardant in resin molding objects where the flame retardant is aluminum hydroxide has 0.3 wt% or less Na<sub>2</sub>O concentration (¶ 1-6, 12-14, 16-21).

41. Sugihara and Ahara do not teach a carbodiimide compound.

42. Takahashi teaches polyester compositions which include carbodiimide compounds (abstract) such as poly(4,4'-diphenylmethane carbodiimide) (col. 4, ln. 19-27). It would have been obvious to one of ordinary skill in the art to use the carbodiimide compounds of Takahashi with the polyesters of Sugihara because the carbodiimide compounds, when used with a thermoplastic elastomer, improve the low temperature impact characteristics and molten state thermal stability of the composition (col. 2, ln. 40-49).

43. As to claim 20, Takahashi teaches using the carbodiimide compounds in amounts of 0.1 to 10 wt% (col. 4 ,ln. 35).

***Response to Arguments***

44. Applicant's arguments with respect Tanaka and Nozaki have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT C. BOYLE whose telephone number is (571)270-7347. The examiner can normally be reached on Monday-Thursday, 9:00AM-5:00PM Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert C. Boyle/  
Examiner, Art Unit 1764

/Vasu Jagannathan/  
Supervisory Patent Examiner, Art Unit 1764